

# *FSA Integration Partner*

United States Department of Education  
Federal Student Aid



## **ITA Product Evergreening Build and Test Report**

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## Introduction

### 1.1 ITA Overview

The Integrated Technical Architecture (ITA) provides a standardized, reusable infrastructure for enabling business capabilities within the FSA application community. The long-term vision of the ITA team is to provide an integrated, enterprise-wide technical architecture that will enable FSA to reduce the number of custom-built applications that are difficult and costly to update and maintain.

### 1.2 Executive Summary

The ITA Product Evergreening Build and Test Report provides details regarding the software products that will be upgraded to more recent versions. Additionally details pertaining to the test conditions and expected results will be presented.

The following is a brief overview of the contents of each section of this report:

#### **Section 1 Introduction:**

- Provides an overview of the contents of this report.
- Describes FSA applications maintained in the ITA production environment and identifies the ITA products being maintained.

#### **Section 2 Software Products**

- Provides a description of the software products that are currently in the ITA environment.

#### **Section 3 Implementation Test Conditions and Expected Results**

- Provides an overview of the test conditions utilized to test the software upgrade.
- Provides an overview of the expected results based on the test conditions for the software upgrade

#### **Section 4 Application Conversion**

- Provides an overview of the application conversion effort for WebSphere 5.0

### 1.3 FSA Applications

This section provides an overview of FSA applications hosted in the ITA production environment.



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### 1.3.1 eCampus Based

The intent of the project is to modernize the existing CB application architecture; migrating from the current platform (COBOL, IBM Mainframe, VSAM data store) to a relational database platform (Oracle), developing a web-based user interface (WebSphere), along with additional software functionality enhancements. This modernized solution is named eCB (electronic Campus Based). The main objective of the modernization effort is to offer institutions and CB staff an integrated and intuitive solution that increases access to information and self-service capabilities supporting FSA's strategic goals.

The eCampus Based application receives support for WebSphere Application Server, IBM HTTP Server, and Network Dispatcher.

### 1.3.2 Exit Counseling

Exit Counseling is the process students go through prior to graduation, and it is the beginning of the repayment phase of the financial aid process. The Exit Counseling application utilizes WebSphere and MQSeries to access the National Student Loan Data System (NSLDS) mainframe to retrieve appropriate loan information.

ITA provides WebSphere Application Server and IBM HTTP Server product support to the Exit Counseling application.

### 1.3.3 Free Application for Federal Student Aid on the Web (FAFSA on the Web)

The FAFSA on the Web application is used by college students and schools to submit financial aid applications to FSA via the Internet.

ITA provides FAFSA on the Web with support for WebSphere Application Server, IBM HTTP Server, and Network Dispatcher.

### 1.3.4 FSA Computer-Based Orientation to Aid Concepts and How-to's (FSA COACH)

FSA COACH is a comprehensive introductory course on school requirements for administering post-secondary student financial aid programs.

ITA provides Network Dispatcher and IBM HTTP Server product support to the FSA COACH application.

### 1.3.5 FSANet

FSANet is an internal portal for FSA employees. It provides general information about FSA, FSA Channels, and the Department of Education. The portal also houses information about FSA standards.

ITA provides WebSphere Application Server, IBM HTTP Server, and Network Dispatcher product support to the FSANet Application.



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### **1.3.6 Information for Financial Aid Professionals (IFAP)**

The IFAP website is an electronic library for financial aid professionals containing publications, regulations, and guidance regarding the administration of Title IV Federal Student Aid Programs.

IFAP receives ITA support for WebSphere Application Server, IBM HTTP Server, and Network Dispatcher.

### **1.3.7 Lender Reporting System (LaRS)**

LaRS is part of the Financial Management System phase IV project. LaRS is an Oracle Financials based application that improves the reliability of lender billing data through a redesigned loan payment process.

ITA provides Network Dispatcher product support to the LaRS application.

### **1.3.8 Ombudsman Redesign**

The Ombudsman website contains information and resources about FSA Ombudsman. The site contains searchable content and links to quickly retrieve information.

ITA provides WebSphere Application Server, IBM HTTP Server, and Network Dispatcher product support.

### **1.3.9 Program Guidance**

The Program Guidance application provides a central location for resources needed by the Program Development Division within FSA. The application provides documents and profiles to identify relevant information quickly for members of this division.

ITA provides WebSphere Application Server, IBM HTTP Server, and Network Dispatcher product support.

### **1.3.10 Schools Portal**

The Schools Portal is a homepage for school-specific information with links, headlines, and calendar functions frequented by the schools. The site is customizable and can store bookmarks.

ITA provides WebSphere Application Server, IBM HTTP Server, Interwoven, Autonomy, and Network Dispatcher product support.

### **1.3.11 Students & Financial Partners Portal**

Portals were developed for the Students and Financial Partners channels to provide a central location for information needed by students and financial partners.

ITA provides WebSphere Application Server, IBM HTTP Server, Interwoven, Autonomy, and Network Dispatcher product support.



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### 1.3.12 EDExpress Basic

EDExpress Basic is an online training course designed for FSA customers. It utilizes the ITA environment to server the training materials and to collect survey information at the end of the course.

ITA provides WebSphere Application Server, IBM HTTP Server, and Network Dispatcher product support.

### 1.3.13 EzAudit

EzAudit is an online document and auditing application designed for FSA customers.

ITA provides WebSphere Application Server, IBM HTTP Server, and Network Dispatcher product support.

### 1.3.14 PIN Site

The PIN Site is an online authentication application designed for FSA customers. It utilizes the ITA environment to verify users for several different FSA applications.

ITA provides WebSphere Application Server, IBM HTTP Server, and Network Dispatcher product support.

### 1.3.15 Students.gov

Students.gov is an access point for students who are looking for information within government & FSA websites.

ITA provides WebSphere Application Server, IBM HTTP Server, Autonomy, and Network Dispatcher product support.

### 1.3.16 Table of FSA Application Release Numbers

The table below presents the release numbers of the FSA applications supported by the ITA team in the production environment.

Application	Current Release Number
eCampus Based	3.0
EDExpress Basic	-
ezAudit	1.01
Exit Counseling	-
FAFSA on the Web	7.0
FSA COACH	1.0
FSANet	2.0
IFAP	2.0



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LaRS	4.11
Ombudsman	-
Program Guidance	1.0
PIN Site	-
Schools Portal	2.0
Students.gov	-
Students & Financial Partners Portal	Students - 1.1 FP - 2.0



## 2 ITA Software Products

This section provides an overview of ITA products used by FSA applications hosted in the ITA production environment. Additionally each product that will be participating in the product upgrade program will be identified and a brief description of the reason(s) will be provided.

### 2.1 IBM HTTP Server

IBM's web serving offering is based upon the Apache web server. The implementation that IBM has custom tailored allows for tight integration into the IBM WebSphere applications and other IBM products. It allows for the serving of multiple web documents, while providing necessary application interaction.

IBM IHS will be upgraded to the selected version of 1.3.26. IHS will be upgraded to version 1.3.26 primarily to support the implementation of the next version of the Application Server discussed in the next section.

### 2.2 IBM WebSphere Application Server

The IBM WebSphere Application Server processes dynamic requests and replies to the end users. It makes use of Java technology compatibility for most web application offerings. One of its most useful features is that it is a highly configurable solution for a small offering or a large enterprise. It is the middleware between the HTTP servers and the databases.

IBM Websphere Application Server is in the process of being upgraded to the selected version of 5.0. The maintenance on the current version of WAS 3.5 is scheduled to end on November 1/03. The need for continued product support from the vendor for WebSphere Application Server required the upgrade to the latest version of WebSphere Application Server.

### 2.3 Network Dispatcher

This IBM product is an integrated portion of the IBM Edge Server. Network Dispatcher provides load balancing. It administers the resource balancing between clusters of web servers and application servers. It is one of many components within the network architecture that allows for high availability. Network Dispatcher upgrades have been completed. Network Dispatcher upgrades have been completed. An effort is currently underway to evaluate and replace Network Dispatcher with Cisco Content Server Switch.

### 2.4 Interwoven TeamSite

As the flagship product of the Interwoven Platform, TeamSite enables content contribution, collaboration, and management across the enterprise. It provides the necessary components to streamline business processes, integrate currently used productivity tools, and accelerate all eBusiness initiatives.





Interwoven TeamSite will be upgraded to the selected version of 5.5. The reason for the upgrade is to continue with the product maintenance support which will expire with the current version.

## 2.5 Informatica

Informatica is a mainframe data tool that converts mainframe data for Oracle so MicroStrategy can generate reports. Informatica will not be upgraded under this evergreening initiative.

## 2.6 Autonomy

Through the use of Autonomy the entire Internet offering is easily parsed into a searchable resource. Users can seamlessly search for content throughout enterprise offered information. It does this through its connectors that combine varying forms of resources (databases, html pages, e-mails, etc.) into one easily accessible resource. Autonomy will not participate in the upgrade process as it may be replaced with Google.

## 2.7 Table of ITA Product Software Versions

The table below presents the version(s) of the software products installed in the ITA production environment.

Software Product	Current Version
IBM HTTP Server (IHS)	v1.3.12
WebSphere Application Server (WAS)	v3.5.6 (HP machines) v3.5.5 (SUN machines)
eNetwork Dispatcher	v4.0.2.25
Interwoven TeamSite	v5.0.1
Informatica	v5.1.2
Autonomy	v3.1.13.2



### 3 Implementation Test Conditions and Expected Results

#### 3.1 Source Code

The source code of the various products to be upgraded is proprietary to the individual software vendors and will not be made available. Receipt of the vendor software product, IBM Internet HTTP Server, IBM WebSphere Application Server, IBM Network Dispatcher and Interwoven TeamSite will be deemed as the equivalent of obtaining the source code. Currently for the products mentioned the latest version of the software has been received.

#### 3.2 Test Conditions

##### 3.2.1 IBM WebSphere Application Server

The IBM WebSphere Application Server has a built-in test application. Upon installation of the application server it is recommended by IBM to run the test application. If the test application loads and operated successfully it can be stated that the installation was correctly executed. This test application is operational once the installation of WebSphere Application Server is complete. The successfully execution of this application will indicate that WAS has been installed correctly.

Number	Test Condition
1	Ensure WebSphere starts up without error
2	Ensure WebSphere is capable of displaying dynamic content
3	Ensure WebSphere IVT script runs without error

Application	WAS Test URL
eCampus Based	<a href="http://www.cbfsap.sfa.ed.gov/CBSWebApp/welcome.jsp">http://www.cbfsap.sfa.ed.gov/CBSWebApp/welcome.jsp</a>
EzAudit	<a href="https://ezaudit.ed.gov/EZWebApp/common/login.jsp">https://ezaudit.ed.gov/EZWebApp/common/login.jsp</a>
FAFSA on the Web	<a href="http://www.fafsa.ed.gov/FOTWebApp/FSLookupServlet">http://www.fafsa.ed.gov/FOTWebApp/FSLookupServlet</a>
FSA COACH	None
FSANet	<a href="http://fsanet.ed.gov/INTRANETWebApp/servlet/CareerzoneFeedback">http://fsanet.ed.gov/INTRANETWebApp/servlet/CareerzoneFeedback</a>
IFAP	<a href="http://ifap.ed.gov/IFAPWebApp/index.jsp">http://ifap.ed.gov/IFAPWebApp/index.jsp</a>
Ombudsman	None
Program Guidance	<a href="http://programguidance.ed.gov/PROGWebApp/default.jsp">http://programguidance.ed.gov/PROGWebApp/default.jsp</a>
Students.gov	<a href="http://www.students.gov/STUGOVWebApp/index.jsp">http://www.students.gov/STUGOVWebApp/index.jsp</a>
Schools Portal	<a href="http://fsa4schools.ed.gov/SCHOOLSWebApp/index.jsp">http://fsa4schools.ed.gov/SCHOOLSWebApp/index.jsp</a>
Students Portal	<a href="http://www.fp.ed.gov/PORTALSWebApp/fp/index.jsp">http://www.fp.ed.gov/PORTALSWebApp/fp/index.jsp</a>
FP Portal	<a href="http://studentaid.ed.gov/PORTALSWebApp/students/english/index.jsp">http://studentaid.ed.gov/PORTALSWebApp/students/english/index.jsp</a>

##### 3.2.2 IBM HTTP Server

The IBM Internet HTTP Server (IHS) can be tested in two ways: a) in conjunction with an Application server b) independently. The test conditions of the IHS are binary in both cases, either content will be displayed or content will not be displayed. In the event that content is displayed it can be deemed that IHS is operating correctly whereas the lack of content being



displayed will indicate IHS is not functioning. These two test conditions are documented in the follow table.

Number	Test Condition
1	Ensure IBM HTTP Server starts up without error
2	Ensure IBM HTTP Server is capable of displaying static content

Application	IHS Test URL
eCampus Based	<a href="http://www.cbfsap.sfa.ed.gov">http://www.cbfsap.sfa.ed.gov</a>
EzAudit	<a href="http://ezaudit.ed.gov">http://ezaudit.ed.gov</a>
FAFSA on the Web	<a href="http://fafsa.ed.gov">http://fafsa.ed.gov</a>
FSA COACH	<a href="http://fsacoach.ed.gov">http://fsacoach.ed.gov</a>
FSANet	<a href="http://fsanet.ed.gov">http://fsanet.ed.gov</a>
IFAP	<a href="http://ifap.ed.gov/">http://ifap.ed.gov/</a>
Ombudsman	<a href="http://www.ombudsman.ed.gov/">http://www.ombudsman.ed.gov/</a>
Program Guidance	<a href="http://programguidance.ed.gov/">http://programguidance.ed.gov/</a>
Students.gov	<a href="http://www.students.gov">http://www.students.gov</a>
Schools Portal	<a href="http://fsa4schools.ed.gov">http://fsa4schools.ed.gov</a>
Students & Financial Partners Portal	<a href="http://fp.ed.gov">http://fp.ed.gov</a> <a href="http://studentaid.ed.gov">http://studentaid.ed.gov</a>

### 3.2.3 Interwoven

The Interwoven product suite can be tested in three ways. The first condition for success is logging into Teamsite. The second step, which depends on the success of the first, is to successfully deploy content to a server. This should be done to all servers available to ensure that OpenDeploy, the third component, is running on all of the servers.

Number	Test Condition
1	Ability to Log into Interwoven
2	Deploy Content to Correct Server
3	Running Content on all servers
4	Able to automate the deployment process

### 3.2.4 Autonomy

The Autonomy upgrade has been placed on hold during the time the Google search option is being considered as a replacement to Autonomy. Unless otherwise stated the Autonomy upgrade will continue to remain on hold as progress on the Google search option continues.



### 3.3 Expected Results

#### 3.3.1 IBM WebSphere Application Server

The correct and successful operation of the pre-loaded demonstration application within WebSphere will be the expected results of the successful installation and operation of WebSphere Application Server. Additionally the following list of results will be expected in the installation of WebSphere.

Number	Test Condition	Expected Result
1	Ensure WebSphere starts up without error	WebSphere starts up
2	Ensure WebSphere is capable of displaying dynamic content	Dynamic content is displayed
3	Ensure WebSphere IVT script runs without error	The script runs without error

#### 3.3.2 IBM HTTP Server

The following expected results are anticipated during the Internet HTTP Server installation test:

- IHS Successfully displays static content
- IHS Successfully displays dynamic content generated from WebSphere

Number	Test Condition	Expected Result
1	Ensure IBM HTTP Server is capable of displaying static content	Static Content is displayed
2	Ensure IBM HTTP Server & WebSphere is capable of displaying dynamic content	Dynamic Content is displayed

#### 3.3.3 Interwoven

The successful installation of Interwoven will yield the expected results as documented below.

- A user can successfully update content within TeamSite
- TeamSite will deploy, through OpenDeploy, to all available servers

Number	Test Condition	Expected Result
1	Ability to Log into Interwoven	Logon successful
2	Deploy Content to Correct Server	Deployment successful
3	Running Content on all servers	New Content is displayed through IHS/WAS
4	Able to automate the deployment process	Deployment proceeds



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### 3.3.4 Autonomy

The Autonomy upgrade has been placed on hold until further direction regarding this upgrade. It is possible that Autonomy will be replaced with Google. The DRE portion of Autonomy has been successfully upgraded over the summer to fix several production issues.

## 4 Application Conversion

### 4.1 Introduction

The ITA team is responsible for the migration of several applications from WebSphere 3.5 to WebSphere 5.0. The following applications have been successfully upgraded to run on WebSphere 5.0:

- Ombudsman
- Program Guidance
- FSA Coach